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## **Consultation Document**

### **Proposed Risk Management Measure for the Non-Pesticidal Uses of Tributyltins, Which Contain the Grouping (C<sub>4</sub>H<sub>9</sub>)<sub>3</sub>Sn**

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**Canada**

## Table of Contents

<b>1</b>	<b>INTRODUCTION .....</b>	<b>3</b>
<b>2</b>	<b>INDUSTRIAL USE AND INCIDENTAL PRESENCE OF TRIBUTYL TINS.....</b>	<b>4</b>
2.1	<i>CURRENT USES.....</i>	4
2.2	<i>INCIDENTAL PRESENCE.....</i>	4
2.2.1	<i>Mono- and diorganotins.....</i>	4
2.2.2	<i>Tetrabutyltin .....</i>	4
<b>3</b>	<b>RELEASES AND EXISTING RISK MANAGEMENT ACTIVITIES FOR TRIBUTYL TINS .....</b>	<b>5</b>
3.1	<i>CANADA.....</i>	5
3.2	<i>INTERNATIONAL.....</i>	6
<b>4</b>	<b>PROPOSED RISK MANAGEMENT MEASURE FOR NON-PESTICIDAL USES OF TRIBUTYL TINS .....</b>	<b>7</b>
<b>5</b>	<b>NEXT STEPS.....</b>	<b>8</b>
<b>6</b>	<b>REFERENCES .....</b>	<b>9</b>
<b>ANNEX A.....</b>		<b>10</b>
	<b>SUMMARY OF THE PROHIBITION OF CERTAIN TOXIC SUBSTANCES REGULATIONS.....</b>	<b>11</b>
	<i>Application .....</i>	11
	<i>Exceptions .....</i>	11
	<i>Prohibitions .....</i>	11
	<i>Permit and Administrative Requirements .....</i>	11

# 1 Introduction

Organotin substances are tin compounds having 1, 2, 3 or 4 organic groups attached and are designated as mono-, di-, tri- or tetraorganotin depending on the number of tin-carbon bonds in the molecule. Organotins are mainly used in the vinyl processing industry and as pesticides. Tributyltins, the groups of substances which is the subject of the consultation document, has the chemical moiety (i.e. grouping)  $(C_4H_9)_3Sn$ .

The final follow-up ecological assessment report for non-pesticidal organotin compounds was published by Environment Canada (EC) in the *Canada Gazette*, Part I, on August 8, 2009, under section 68 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999) [EC, 2009a]. With respect to non-pesticidal tributyltins, this assessment report concluded that they are entering, or may enter, the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity, as defined in paragraph 64(a) of CEPA 1999. Additionally, tributyltins meet the criteria for persistence and bioaccumulation potential as set out in the *Persistence and Bioaccumulation Regulations* (SOR/2000-107) [EC, 2000].

As proposed in the *Risk Management Approach for Non-Pesticidal Organotin Compounds* that was published in August 2009 (EC, 2009b), the Government of Canada indicated it would consider the addition of non-pesticidal tributyltins to the *Prohibition of Certain Toxic Substances Regulations, 2005* (SOR/2005-41) [EC, 2005], herein referred to as "Prohibition Regulations", to prohibit the manufacture, use, sale, offer for sale and import.

Environment Canada is developing a regulatory proposal for adding non-pesticidal uses of tributyltins to the Prohibition Regulations.

This consultation document provides an overview of this regulatory proposal. The intent of this consultation document is to encourage discussion and to give interested and affected parties an opportunity to provide input or comments regarding this regulatory proposal. This consultation focuses on the environmental and economic issues associated with the proposed prohibition of the substances. The purpose of this consultation is to:

- Inform interested and affected stakeholders of the regulatory proposal; and
- Provide an opportunity for interested and affected stakeholders to comment on the regulatory proposal.

The Government of Canada is committed to providing interested and affected parties with the opportunity to take part in consultations at all stages of the regulatory development process. All interested parties may comment on the regulatory proposal by writing to the contact provided in Section 5 of this document.

## **2 Industrial Use and Incidental Presence of Tributyltins**

### **2.1 Current Uses**

#### **Non-Pesticidal Applications**

Tributyltins are not used in Canada, however, they may be found as an impurity in tetrabutyltin (up to 20%) and in mono- and dibutyltin compounds (less than 1%).

#### **Pesticidal Applications**

Pesticidal uses of tributyltins are regulated by Health Canada's Pest Management Regulatory Agency (PMRA) under the authority of the *Pest Control Products Act* (PCPA) [HC, 2002].

### **2.2 Incidental Presence**

#### **2.2.1 Mono- and diorganotins**

Mono- and dibutyltins are primarily used in Canada as tin stabilizers in polyvinyl chloride (PVC) processing, but are also used in lesser amounts for coatings for glass and as catalysts. The mono- and diorganotins used for these applications may contain less than 1% of tributyltins as an impurity.

The final follow-up ecological assessment report for non-pesticidal organotin compounds concluded that mono- and diorganotins did not meet the criteria under section 64 of CEPA 1999, since harmful concentrations of these substances would not be reached given that there is an Environmental Performance Agreement (EPA) in place respecting the use of tin stabilizers in the vinyl industry.

#### **2.2.2 Tetrabutyltin**

Tetrabutyltin is used as a raw material for the production of mono- and dibutyltin compounds in Canada. The tetrabutyltin used as the raw material may contain up to 20% tributyltins as an impurity.

The final follow-up ecological assessment report for non-pesticidal organotin compounds concluded that tetrabutyltin meets paragraph 64(a) of CEPA 1999.

## 3 Releases and Existing Risk Management Activities for Tributyltins

### 3.1 Canada

#### Pesticidal Uses

Pesticidal uses of tributyltins are regulated by PMRA under the authority of the PCPA. In the past, tributyltin compounds had entered the environment mostly from their pesticidal uses. However, action has already been taken on tributyltin pesticides with the greatest exposure to the environment. The use of tributyltins in antifouling paints on ship hulls has been prohibited in Canada since January 1, 2003, following the PMRA's special review.

The remaining pesticides registered under the PCPA for use in wood and material preservatives have more limited environmental exposure. In a regulatory consultation document published July 15, 2010, Health Canada proposed a phase-out of all remaining pesticidal uses of tributyltin compounds. A final regulatory decision is pending consideration of comments received during the consultation process.

#### Non-Pesticidal Uses

Non-pesticidal tributyltin compounds may enter the environment because of their incidental presence in other butyltin products (mono- and dibutyltins, and tetrabutyltin) and from the environmental breakdown of tetrabutyltin.

*An Environmental Performance Agreement Respecting the Use of Tin Stabilizers in the Vinyl Industry* has been in place since March 10, 2008, to prevent the release of tin stabilizers (mono- and dibutyltins) into the environment, and therefore the release of the incidental presence of tributyltins (EC, 2008). The EPA was developed by Environment Canada, the Tin Stabilizers Association (TSA), and the Vinyl Council of Canada (VCC). All the vinyl compounding facilities using tin stabilizers in Canada must implement all of the practices set out in the *Guideline for the Environmental Management of Tin Stabilizers in Canada* (VCC, TSA, 2006). This Guideline was developed by the VCC and the TSA and is applicable to companies that manufacture or use tin stabilizers for PVC processing. It is estimated that implementation of the practices in the Guideline has substantially reduced the potential for release to the environment of organotins, and consequently any tributyltins incidentally present.

In addition, to manage releases of tetrabutyltin to the aquatic environment, a Code of Practice is being developed. It is noted that the level of tributyltins found in tetrabutyltin is reduced to less than 1% during the production of mono- and dibutyltin compounds. Therefore, any incidentally present tributyltins that may be released with tetrabutyltin, as well as any potential breakdown of tetrabutyltin into tributyltins, will be controlled by the proposed Code.

The Code will identify best management procedures and practices for activities involving the import, distribution, manufacture and use of tetrabutyltin in Canada. Environment Canada is currently consulting on this proposed Code of Practice, and to that effect, a separate working document is also available to stakeholders at the following website:

[www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm](http://www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm)

There is also a Ministerial Condition No 13618 in place for tetrabutyltin under paragraph 84(1)(a) of CEPA 1999. The Ministerial Condition imposes conditions restricting its use, and prescribing handling and disposal procedures to control its release to the environment. As the Code of Practice will incorporate the requirements of the Ministerial Condition already in place, the Ministerial Condition would no longer be necessary and therefore Environment Canada will consider rescinding this Condition once the Code of Practice is in place.

### **3.2 International**

The European Union has adopted a decision on May 28, 2009, that would prohibit the use of triorganotin compounds and of dibutyltins in articles where the concentration in the article, or part thereof, is greater than the equivalent of 0.1% by weight of tin (EU, 2009). The prohibition for triorganotins has been in effect as of July 1, 2010, and the one for dibutyltins will be in effect on January 1, 2012.

The International Maritime Organization's International Convention on the Control of Harmful Anti-fouling Systems on Ships was adopted in October 2001 and came into force in September 2008. The Convention stipulates that effective January 1, 2003, ships shall not apply or re-apply organotin compounds (including tributyltins) that act as biocides in antifouling systems. The Convention also stipulates that effective January 1, 2008, ships shall either not bear such compounds on their hulls or external parts or surfaces, or shall bear a coating that forms a barrier to such compounds leaching from underlying non-compliant antifouling systems (IMO, 2001). Canada is a Party to this Convention.

## 4 Proposed Risk Management Measure for Non-Pesticidal Uses of Tributyltins

It is proposed to add tributyltins to the Prohibition Regulations to prohibit their manufacture, use, sale, and offer for sale and import in Canada. Annex A summarizes the main elements of the Prohibition Regulations. The prohibition of tributyltins will not apply to instances where the substance is incidentally present. For example, tributyltins may be present as an impurity (i.e. incidental presence) in other organotin compounds, such as tetrabutyltin, mono- and dibutyltins. Hence, the following would not be affected by the proposed amendment as per section 4 of the Prohibition Regulations:

- Tetrabutyltin which is used for the production of mono- and dibutyltin stabilizers.
- Mono- and dibutyltins which are used in the following applications:
  - PVC processing
  - glass coating
  - as catalysts in the production of polymers and urethanes

It is noted that it is currently not possible to eliminate these trace amounts, and there are no known associated releases to the environment from these activities.

Furthermore, although it is proposed to add tributyltins to the Prohibition Regulations, these regulations specify that they do not apply to substances that are contained in a control product within the meaning of section 2 of the PCPA (i.e. a pesticide regulated under the PCPA).

Adding tributyltins to the Prohibition Regulations will prevent their reintroduction in any non-pesticidal uses in Canada.

## 5 Next Steps

Please submit comments on this consultation document by **February 18, 2011**. All comments submitted by that date will be taken into consideration while drafting the proposed regulation. Environment Canada welcomes the distribution of this consultation document to any interested and affected parties. A copy of this consultation document is available on the CEPA registry website at:

[www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm](http://www.ec.gc.ca/lcpe-cepa/eng/participation/default.cfm)

Pursuant to section 313 of CEPA 1999, any person who provides information to the Minister of the Environment under CEPA 1999 may submit with the information a request that it be treated as confidential. Comments and information submissions on this regulatory proposal should be submitted either by mail, email or fax to:

Director  
Chemical Production Division  
Environment Canada  
Place Vincent Massey, 11th Floor  
351 St. Joseph Boulevard  
Gatineau QC K1A 0H3  
Fax: 819-994-5030  
Email: [pgpc-cmp.dppc-cpd@ec.gc.ca](mailto:pgpc-cmp.dppc-cpd@ec.gc.ca)

Please type "Consultation on Tributyltins Prohibition" in the subject line of your message.

Following the current consultation, comments received will be considered during the development of the draft regulatory proposal. Environment Canada will then publish the draft regulatory proposal in the *Canada Gazette*, Part I, for a 60-day comment period. Any comments received will be considered during the preparation of the final regulatory amendment which will be published in the *Canada Gazette*, Part II. It is proposed that this regulatory amendment would come into force on the day that it is published in the *Canada Gazette*, Part II.



## 6 References

[EC], Environment Canada, 2000. *Persistence and Bioaccumulation Regulations* (SOR/2000-107). Environment Canada website:

[www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=35](http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=35)

[EC], Environment Canada, 2005. *Prohibition of Certain Toxic Substances Regulations, 2005* (SOR/SOR/2005-41). *Canada Gazette*, Part II, Vol. 139, No. 5. Environment Canada website:

<http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailreg.cfm?intReg=87>

[EC], Environment Canada, 2008. *Environmental Performance Agreement Respecting the Use of Tin Stabilizers in the Vinyl Industry*. Environment Canada website:

[www.ec.gc.ca/epe-epa/default.asp?lang=En&n=69737ECC-1](http://www.ec.gc.ca/epe-epa/default.asp?lang=En&n=69737ECC-1)

[EC], Environment Canada, 2009a. *Follow-up to the 1993 Ecological Risk Assessment of Organotin Substances on Canada's Domestic Substances List*. Environment Canada website:

[www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=B3B78BAF-1](http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=B3B78BAF-1)

[EC], Environment Canada, 2009b. *Proposed Risk Management Approach for Non-Pesticidal Organotin Compounds*. Environment Canada website:

[www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=98F99990-1](http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=98F99990-1)

[EU], European Union, 2009. Commission Decision of 28 May 2009 amending Council Directive 76/769/EEC as regards restrictions on the marketing and use of organostannic compounds. European Union website:

[eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:138:0011:01:EN:HTML](http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:138:0011:01:EN:HTML)

[HC], Health Canada, 2002. Pest Control Products Act. Department of Justice website:

[laws.justice.gc.ca/eng/P-9.01/FullText.html](http://laws.justice.gc.ca/eng/P-9.01/FullText.html)

[IMO], International Maritime Organization, 2001. *International Convention on the Control of Harmful Anti-Fouling Systems on Ships*. International Maritime Organization website:

[www.imo.org](http://www.imo.org)

[VCC, TSA], Vinyl Council of Canada and the Tin Stabilizer Association, 2006. *Guideline for the Environmental Management of Tin Stabilizers in Canada*. Environment Canada website:

[www.ec.gc.ca/epe-epa/default.asp?lang=En&n=14B74D95-1](http://www.ec.gc.ca/epe-epa/default.asp?lang=En&n=14B74D95-1)

## **Annex A**

## **Summary of the *Prohibition of Certain Toxic Substances Regulations***

The existing Prohibition Regulations prohibit the manufacture, use, sale, offer for sale and import of the substances listed in Schedule 1 and 2 to the Regulations. Sections of these regulations are briefly outlined below. The full text of the Prohibition Regulations is available on the CEPA Registry website:

[www.ec.gc.ca/lcpe-cepa/eng/regulations/detailreg.cfm?intReg=87](http://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailreg.cfm?intReg=87)

### ***Application***

Section 1 sets out the application of the Regulations applicable to the toxic substance listed in Schedule 1 and 2 of these Regulations.

### ***Exceptions***

Sections 2 and 3 describe the exemptions to the prohibitions that are permitted. It must be noted that paragraph 2(b) states that these Regulations do not apply notably to toxic substances contained in a control product within the meaning of section 2 of the *Pest Control Products Act* (i.e. a pesticide regulated under the PCPA).

### ***Prohibitions***

Sections 4 and 5 set out the prohibition for manufacture, use, sale, offer for sale or import of a toxic substance (listed in Schedule 1 and 2) or a mixture or product containing that substance. It must be noted that section 4 indicates that no person shall manufacture, use, sale, offer for sale or import a toxic substance set out in Schedule 1 or a mixture or product containing any such toxic substance **unless the substance is incidentally present**.

### ***Permit and Administrative Requirements***

Sections 6 to 10 are related to the permit system established to allow the manufacture, use, sale, offer for sale or import of a toxic substance or a mixture or product containing such a substance referred to in either section 4 or 5. Those sections describe conditions of issuance of a permit, revocation provisions, reporting requests, laboratory testing requests, the format of a submission and record keeping. Sections 11 and 12 are administrative in nature.